a plurality of processors arranged to receive and analyze at least one of the image portions, the processors being arranged to operate in parallel and being configurable to implement one or more algorithms selected from a plurality of different algorithms for analyzing the image portions; and

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a data distribution system arranged to receive image data, select at least a first processor for receiving a first image portion of the image data and one or more first algorithms selected from the plurality of different algorithms, select at least a second processor for receiving a second image portion of the image data and one or more second algorithms selected from the plurality of different algorithms, output the first image portion to the first processor and the second image portion to the second selected processor, and configure the first processor with the one or more first algorithms and the second processor with the one or more selected algorithms.

SUB 61

11. (Amended Once) An apparatus for inspecting a plurality of image portions of at least a region of a sample, the apparatus comprising:

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a plurality of distributors arranged to receive the image portions; and

a plurality of processors that are arranged into a plurality of subgroups that are each coupled to an associated distributor, each processor being configurable to implement one or more algorithms selected from a plurality of different algorithms for analyzing the image portions, each distributor being configurable to select one or more algorithms selected from the plurality of different algorithms, output selected image portions to its associated subgroup of processors, and configure its associated processor with its selected one or more algorithms, at least two of the processors being arranged to analyze at least two of the image portions in parallel.

SUB 61

18. (Amended Once) A method of inspecting a sample having a plurality of fine patterns thereon, and processing data resulting from the inspection, comprising:

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a) receiving data derived from the inspection in a multiprocessor system, the system comprising a master processor and a plurality of slave processors;

b) dividing the data into groups using the master processor, each data group corresponding to information derived from a portion of the sample, wherein each slave processor

is configurable to implement one or more algorithms selected from a plurality of different algorithms for analyzing a one of the data groups;

c) selecting one or more algorithms from the plurality of different algorithms for each slave processor and configuring each slave processor with the selected one or more algorithms for such each slave processor;

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d) processing the data groups with the slave processors based on the selected one or more algorithms for each slave processor; and

e) deriving defect information regarding the sample and the fine patterns from the combined data.

A5 24. (Amended Once) A method for analyzing image data obtained from a sample using a plurality of processors, comprising the acts of:

receiving image data from an inspection system that generates the image data from a sample;

dividing the image data into a plurality of image portions that correspond to various portions of the sample;

A4

outputting each image portion to a selected processor, at least some of the image portions going to different processors, each processor being configurable to implement one or more algorithms selected from a plurality of different algorithms for analyzing the image portions;

selecting one or more algorithms from the different algorithms of each selected processor and configuring each selected processor with its selected one or more algorithms;

analyzing each image portion for defects within the selected processor based on the selected one or more algorithms for such selected processor; and

outputting and combining results from each processor such that defect data is compiled for the entire image data.

A5 A5 34. (Amended Once) A computer readable medium containing program instructions for inspecting a sample having a plurality of fine patterns thereon, and processing data resulting from the inspection, the computer readable medium comprising:

computer readable code for receiving data derived from the inspection in a multiprocessor system, the system comprising a master processor and a plurality of slave processors;

computer readable code for dividing the data into groups using the master processor, each data group corresponding to information derived from a portion of the sample, wherein each slave processor is configurable to implement one or more algorithms selected from a plurality of different algorithms for analyzing a one of the data groups;

computer readable code for selecting one or more algorithms from the plurality of different algorithms for each slave processor and configuring each slave processor with the selected one or more algorithms for such each slave processor;

computer readable code for processing the data groups with the slave processors based on the selected one or more algorithms for each slave processor;

computer readable code for deriving defect information regarding the sample and the fine patterns from the combined data; and

a computer readable medium for storing the computer readable codes.

39. (Amended Once) A computer readable medium containing program instructions for inspecting a sample having a plurality of fine patterns thereon, and processing data resulting from the inspection, the computer readable medium comprising:

computer readable code for receiving image data from an inspection system that generates the image data from a sample;

computer readable code for dividing the image data into a plurality of image portions that correspond to various portions of the sample;

computer readable code for outputting each image portion to a selected processor, at least some of the image portions going to different processors, each processor being configurable to implement one or more algorithms for analyzing the image portions selected from a plurality of different algorithms;